The HV switch 38 is configured to sequentially deliver the defibrillation pulse across the pair of electrodes 22 and 24 to the patient in the desired polarity and duration. It should be noted that the HV switch 38 could be adapted to deliver a single polarity (monophasic), both negative and positive polarities (biphasic) or multiple negative and positive polarities (multiphasic) in the preferred embodiment The timer 34 is connected to the processor 40 for providing a defibrillation pulse interval or duration when delivering the defibrillation pulse across the electrode pair 22 and 24. The activation/deactivation button 36 is connected to the processor 40 to enable the user to activate/deactivate the delivery of a defibrillation pulse across the electrodes 22 and 24 when the VF or other shockable rhythm is detected. Note that the activation/deactivation button 36 can function in both AED and manual modes in the preferred embodiment. The voice circuit/speaker 41 is coupled to the processor 40 and provides voice instructions to the user during the operation of the defibrillator 20. The display 42, connected to the processor 40, is preferably a liquid crystal display (LCD) and provides audio and visible feedback to the user. The battery 48 provides power for the defibrillator 20 and in particular for the voltage charger 46, which charges the capacitors in the energy-storage capacitor network 44. The energy-storage capacitor network 44 includes a plurality of capacitors and resistors that are arranged in series or parallel arrangement, or a combination of series and parallel arrangement to supply a plurality of voltage-level outputs across the electrodes 22 and 24. It will be apparent to those skilled in the art that a variety of RC arrangements can be implemented to generate different voltage levels. In an alternate embodiment, the function of the energy-storage capacitor network 44 can be performed by functionally equivalent circuits, such as a digital-processor circuit or an application-specific integrated circuit (ASIC).

Amend the two paragraphs beginning on page 8, line 16 and continuing through page 9, line 12 to read as follows.

Briefly, an input signal indicative of patient movement is received via the sensor 12 and provided to the measurement circuit ~~10~~50. The signal is then sent to a signal processor 52 and forwarded to a correlator ~~54~~60, and the correlated signal is ~~transmitted to~~processed by the processor 40. The processor 40 then evaluates the signals to produce an output ~~102~~signal. As will be appreciated by those skilled in the art, an appropriate signal processing includes, for example, band-pass filters, Fourier transforms, wavelet transforms, and joint time-frequency spectrograms. In addition, the method for correlating the data can be any

correlation method known in the art. For example, correlation methods include specific and general cross-correlation techniques, which include known mathematical functions as well as any process that effectively correlates the data. Specific implementations include, but are not limited to, finite sampled or continuous estimates of cross-covariance and cross-correlation, both biased and unbiased. Alternatively, correlation may perform similarity comparisons between any multiple signals.

Meanwhile, an input signal indicative of the patient impedance is received across the electrodes 22 and 24 and transmitted to a differential-mode amplifier 56 and a common-mode amplifier ~~52~~ 62 which amplify the signal prior to transmitting the signal to the signals processors. The resulting signals are then transmitted to their respective signal processors 58 and 64 which process the signals to emphasize particular features. The resulting processed signals are then transmitted to a correlator ~~60~~66, which correlates the signals. At the same time, the input signal is transmitted to impedance detector ~~66~~68, which provides a trans-electrode impedance signal to ~~the~~ a signal processor ~~52~~70. Signal processor ~~52~~ 70 processes the signal from the impedance detector 68 to emphasize particular features of the signal. The resulting processed signal is then transmitted to a correlator ~~72~~73, which correlates the signal from signal processor 70 with the processed signal from the differential amplifier signal processor 58. Once the signals have been correlated at their respective correlators 60, ~~72~~66 and 73, the resulting signals are ~~transmitted to~~processed by the processor 40, which then further evaluates the results of the correlators 60, 66 and ~~72~~ 73 to provide an indication of the degree of corruption of the signal of interest. The processor 40 finally provides an output signal, which may be analyzed further as discussed with respect to FIG. 4 below.

Amend the paragraph beginning on page 10, line 7 to read as follows.

When a rescuer performs chest compressions as part of doing CPR on the patient, the resulting chest movement tends to disturb the electrodes placed on the chest area. ~~As such, the sensor 12, such as an accelerometer that is connected to the mechanical disturbance detector 10 is also placed on the patient for detecting the patient's movement in response to the precordial compressions.~~ This is undesirable for detecting ECG signals as the movement of the electrodes on the chest skin area generates interfering electrical noise or artifacts, which may corrupt~~s~~ the ECG signal. As discussed in detail later, the artifact in the ECG signal caused by mechanical disturbances of sensors, electromagnetic interference, other environmental conditions, or artifact caused by movement due to the cardio-pulmonary

resuscitation (CPR) operation are nevertheless useful as indicators that CPR is being performed, when CPR is concluded, and when the patient is being handled. An accelerometer or other motion sensor may be included in some embodiments for such detection purposes. ~~reduced, thereby enhancing the analysis of the ECG signal during a CPR operation. The ability to analyze the ECG accurately and rapidly during the CPR operation reduces the time that the defibrillation shocks must be delivered to the patient after the discontinuation of the mechanical disturbance which increases the chances of a successful rescue attempt.~~ As such, the sensor 12, such as an accelerometer that is connected to the mechanical disturbance detector 10 is also placed on the patient for detecting the patient's movement in response to the precordial compressions. The ~~inventive system~~defibrillator 20 is also provided with the display 42 for visually indicating the shock annunciation, or may be equipped with a voice circuit and speaker ~~(not shown)~~41 for providing audible announcement just prior to delivering the defibrillation shocks.